

**REMARKS**

Claims 17–23, 25, 46–49 and 51–59 are pending in the present application.

Reconsideration of the claims is respectfully requested.

**35 U.S.C. § 103 (Obviousness)**

Claims 46–49, 52–53 and 55–57 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,192,059 to *Khan et al* in view of “Fabrication Technique for Fully Recessed Oxide Isolation,” IBM Technical Disclosure Bulletin vol. 19, no. 10, pp. 3947-3950 (March 1, 1977) (“the IBM TDB”). This rejection is respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142, p. 2100-125 (8th ed. rev. 5 August 2006). Absent such a *prima facie* case, the applicant is under no obligation to produce evidence of nonobviousness. *Id.*

To establish a *prima facie* case of obviousness, three basic criteria must be met: First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *Id.*

Independent claim 46 recites that asperities are absent from the bottom surface of the polysilicon layer. Such a feature is not found in the cited references. Neither reference mentions asperities. The IBM TDB, cited in the Office Action as teaching the absence of asperities, makes no such teaching and, because of the nitride encasing the polysilicon electrode, does not disclose a reoxidation of the gate structure that would inherently result in prevention or elimination of asperities on the bottom surface of the polysilicon layer.

No viable motivation for combining the teachings of the cited references in the proposed manner is identified in the Office Action. The Office Action merely states:

Since Kahn and the IBM TDB are from the same field of endeavor, the purpose disclosed by the IBM TDB would have been recognized in the pertinent prior art of Khan.

Paper No. 20060623, page 6. However, merely addressing the same field of endeavor does not provide a specific motivation for combining the selected teachings from the two references. Moreover, the IBM TDB proposes replacing a thick nitride and thin oxide used for masking dopant implantation – where the thick nitride causes mechanical strain – with a thin oxide, thin nitride, and thick nitride-encased polysilicon. No apparent benefit for substituting the nitride-encased polysilicon of the IBM TDB for the polysilicon 15 of *Khan et al.*

In addition, the proposed combination fails to achieve the claimed invention without further modification of the respective teachings. *Khan et al* teaches reoxidizing the polysilicon 15 while the nitride 5 completely covers the oxide 4, precluding oxidation of oxide 4 and the accompanying uplift

around a peripheral edge of the gate structure. To achieve the claimed invention, the teachings of *Khan et al* must be modified to include patterning of the nitride 5 prior to reoxidation of the polysilicon 15. In addition, the nitride-encasing of the polysilicon in the IBM TDB precludes reoxidation of the polysilicon. To achieve the claimed invention, the teachings of the IBM TDB must be modified to include removal (or non-formation) of the nitride on the sidewalls and top of the polysilicon element.

Therefore, the rejection of claims 46–49, 52–53 and 55–57 under 35 U.S.C. § 103 has been overcome.


If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at *dvenglarik@munckbutrus.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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